

Construction and Materials Manual

State of Wisconsin

Department of Transportation



Glossary

Absorption	The process of a solid taking up liquid into its interior by capillarity
Abrasion	The process of wearing away by rubbing.
Abutments	The structural elements supporting the ends of a bridge.
Access Control	See Controlled Access.
Addendum	A revision to the plans or the proposal form developed before opening of proposals.
Additive	A substance or agent added in small amounts to a basic ingredient of a mixture prior to mixing.
Admixture	Any material, other than Portland cement, aggregates, and water, added to a concrete batch just before or during mixing.
Advertisement	The advertisement for proposals for all work or materials on which bids are required. The advertisement will indicate with reasonable accuracy the quantity and location of the work to be done, or the character and quantity of the material to be furnished, and the time and place of submitting and opening the proposals..
Aggregate	Inert mineral material such as sand, gravel, crushed gravel, crushed stone or combinations thereof.
Agreed Unit Price Contract	An agreement in which the unit cost for each work item has been fixed through negotiation rather than by bidding.
Air-Entraining Agent	A material added to concrete to increase the amount of trapped air in the mixture. Entrained air is present in the form of minute bubbles
Air-Entraining Cement	Cement into which air-entraining agents have been interground at the mill.
Angle of Repose	The acute angle measured between a horizontal plane and the maximum unsupported slope at which a material will lie without sliding.
Anti-Desiccant	A chemical emulsion applied to needles of newly planted evergreens to reduce loss of moisture.
Archeology	The study of cultures and physical remnants of historic and prehistoric periods.
Arterial Highway	A general term denoting a highway primarily for through traffic, usually on a continuous route.
As-Built Plan	An exact reproduction of the original contract plan upon which is drawn or written, in red ink, all additions, deletions, and modifications to the original plan that have actually been constructed.
Asphalt	A black thermoplastic cementitious material, consisting predominantly of bitumen's, and occurring in nature or obtained in the refining of petroleum. It may be solid, semisolid or liquid in consistency.
Asphalt Cement	Asphalt refined to meet specifications for paving purposes. The term is often abbreviated "AC".
Asphaltic Binder Course	A plant mix of coarse graded aggregate and asphaltic material, which constitutes the lower layer of the asphaltic pavement.
Asphaltic Binder Mixture	A coarse graded asphaltic mixture normally having less asphaltic material than a surface mixture and used for construction of the binder course upon which the asphaltic surface course is placed.
Asphaltic Concrete	A designed combination of mineral aggregate filler and asphaltic cement mixed in a plant, laid, and compacted while hot.
Asphaltic Emulsion	A mixture in which minute globules of bitumen are suspended in water. When the emulsion is applied to a surface, the water evaporates or runs off quickly, leaving a thin coating of bitumen.

Asphaltic Material	A substance characterized by the presence of asphalt, or one from which asphalt can be derived.
Asphaltic Surface Course	See Surface Course.
At-Grade Intersection	An intersection where all roadways join or cross at the same level.
Automatic Mixing Plant	A plant which, after an initial input by the operator to begin the sequence of operations, will proceed through a predetermined sequence of weighing, proportioning, and mixing operations that culminate in an acceptable batch of asphaltic or concrete mixture, with no further input by the operator.
Auxiliary Lane	The portion of the roadway adjoining the traveled way for parking, change of speed, or for other purposes supplementary to through traffic movement.
Award	The department's acceptance of a bid.
Backfill	Material used to replace, or the act of replacing, material removed during construction; also may denote material placed, or the act of placing, material adjacent to structures.
Back Sight	A survey sight taken along a previously established survey alignment in order to extend the line; a survey sight taken on a point of previously established elevation in order to establish the elevations of other points.
Back Slope	A surface pitched downward and toward the traveled way; normally, lying between the construction limit and the ditch.
Balance Points	Points on the centerline of the roadway between which the amount of cut (excavation) equals the amount of fill (embankment) after the quantities have been adjusted for swell or shrinkage.
Base	The layer or layers of specified or selected material of designed thickness placed on a subbase or subgrade to support a surface course.
Batch	A mixture of proportioned ingredients producing a defined volume of mix.
Batch Plant	An assembly consisting of a mixer and its feeder components by which aggregates are proportioned with either cement or asphalt, in order to produce a batch.
Batter Pile	A pile purposely driven at an angle with the vertical.
Bench Mark	A permanent point of known or assumed elevation.
Bent	The term is used in connection with bridges supported by timber trestles. A framed bent is a structural unit consisting of posts that rest upon a sill and support a cap. A pile bent consists of piles that support a cap. The cap supports the stringers and deck.
Berm	A narrow shelf or ledge along the top of a slope; a shoulder.
Bidder	An individual, partnership, joint venture, corporation, limited liability company, limited liability partnership, or a combination of any or all jointly, submitting a proposal (bid) for the work advertised in the invitation for bids, acting directly or through a duly authorized representative.
Binder	The material used to stick the aggregate particles together in a mixture.
Bitumen	A group of hydrocarbons, including asphalt, tar, and coal tar pitch.
Bleeding, Asphaltic	The presence of uncombined asphalt cement on the surface of an asphaltic pavement.
Bleeding, Concrete	The presence of uncombined mixing water on the surface of freshly placed concrete.
Blue Tops	Wooden hubs or stakes driven into the subgrade to indicate the finished subgrade elevation.
Borrow	Suitable material from sources outside the right-of-way limits of the project, used primarily for embankments.
Breakdown Rolling	The initial compaction effort applied to a freshly-placed asphaltic mixture by a roller operating immediately behind the paver.

Breaker Run	Aggregate composed of very large particles resulting from mechanical crushing of stone in a primary crusher, and which has not been separated by screens into standardized sizes.
Bridge	A structure having a span of more than 20 feet from face to face of abutments or end bents, measured along the centerline of the roadway, spanning a water course or other opening or obstruction, such as a highway or railroad, including the substructure, superstructure, and trestle work approaches.
Bridge Length	The dimension measured along the line of survey stationing back-to-back of backwalls of abutments, if present, otherwise end-to-end of the bridge floor; but in no case less than the total clear opening of the structure.
Bridge Width	The dimension measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs, or in the case of multiple height of curbs, between the bottoms of the lower risers, or if curbs are not used, between inner faces of parapet or railing.
Butt Joint	A transverse interface between existing and new paved surfaces, formed by cutting or sawing a vertical notch into the existing surface and then paving into the notch.
Calendar Day	Every day the calendar shows, including Saturdays, Sundays, and department-specified holidays.
Camber	A slight convex upward curvature built into a structure or a structural member which allows for the downward deflection of the structure under load, in order to match finished grade line.
Cap	A heavy, horizontal member placed on top of the piles or posts of a trestle bent.
Carry-Over	The accidental depositing of fine material in an asphaltic plant hot bin which should contain only larger size aggregate.
Catch Basin	Collector box with settling chamber to catch debris and heavy soils carried by storm sewer.
Cement	The substance used for binding particles of aggregate together to form a pavement. Examples include Portland cement (PCC) and asphalt cement (AC).
Cement Paste	A mixture of Portland cement and water.
Central Mix	Concrete which has been completely mixed in a stationary plant. Further mixing in the transporting vehicle is not needed.
Certificate of Compliance	A document, provided by a manufacturer, producer, or supplier of a product, stating that the product as furnished to the contractor complies with the pertinent specifications and contract requirements.
Certified Report of test or Analysis	A certified test report, provided by a manufacturer, producer, or supplier of a product, indicating that actual results of tests or analyses comply with the elements of the specification requirements.
Channelized Intersection	An at-grade intersection in which traffic is directed into definite paths by islands, barriers or markings.
Chip Seal	An asphaltic surface treatment consisting of a high rate spray application of asphalt emulsion, followed immediately by an overlay of aggregate chips.
Cloverleaf	A 4-leg interchange with loops for left turns and outer connections for right turns or two-way ramps for these turns. A full cloverleaf has ramps for two turning movements in each quadrant.
Coarse Aggregate	Aggregate predominantly retained on the No. 4 sieve.
Cofferdam	A watertight enclosure from which water is pumped to expose a stream bed or lake bed so construction may proceed under dry conditions.
Cold Roller	The final unit in an asphaltic paving compaction train. It removes small irregularities from the surface put produces only minor compactive effect.
Cold Screen	A wire mesh used to separate the sizes of an unheated, undried aggregate.
Completion Date	The calendar date shown in the proposal on or before which the work contemplated under the contract shall be completed.

Composite Pipe	Pipe having a wall cross-section of ABS (Acrylonitrile-Butadiene-Styrene) material for the inner and outer surfaces, which are separated by a lightweight (perlite) concrete mixture.
Concrete; Portland Cement Concrete	The product resulting from mixing aggregates such as sand, crushed stone and gravel with Portland cement and water to produce Portland cement concrete.
Concrete Mobile Mixer	A self-propelled mixer having internal storage bins and tanks for cement, aggregates and water, and an internal batch mixing capability. It is used for production at job sites where demand may be small or delivery time may be critical.
Construction Joint	A vertical joint made necessary by a prolonged interruption in the placing of the surfacing material.
Construction Limits	The limits of grading or other work generally defined by slope stakes offset from the actual slope intercepts or limits of the work.
Contract	<p>The written agreement between the department and the contractor setting forth the obligations of the parties to the contract, including, but not limited to, performance of the work, furnishing of labor and materials, and basis of payment.</p> <p>The contract includes the notice to contractors, proposal, contract form, contract bond, standard specifications, supplemental specifications, interim supplemental specifications, special provisions, addenda, general plans, detailed plans, notice to proceed, and contract change orders and agreements required to complete the construction of the work in an acceptable manner, including authorized extensions, all of which constitute one instrument.</p>
Contract Bid Item	An item of work whose quantity and unit of payment are specified in the contract.
Contract Bond	The department-approved form of security, executed by the contractor and the contractor's surety or sureties, guaranteeing the performance of the contract work, completion of the contract requirements, and the payment of claims as provided in 779.14 of the Wisconsin statutes.
Contract Change Order	A written order or authorization executed by the engineer covering work not otherwise provided for in the contract, revisions in or amendments to the contract, or conditions specifically prescribed in the specifications as requiring contract change orders. The change order document becomes a part of the contract when executed by the department.
Contract Period	The period from the specified date of commencing work to the date that the specified number of calendar or working days has elapsed, both dates inclusive, or from the specified date of commencing work to the specified completion date, both dates inclusive; as specified in the contract.
Contract Time	The number of calendar or working days shown in the proposal representing the time allowed for the completion of the work contemplated in the contract.
Contract Time Extension	An allowance of calendar or working days given to the contractor for unavoidable delays to the prosecution of the work or because of increased value of the contract, and resulting in an overrun of contract time.
Contraction Joint	A transverse vertical joint sawn in a concrete pavement slab to control the location of transverse cracks.
Contractor	The individual, partnership, joint venture, corporation, limited liability company, limited liability partnership, or agency undertaking the performance of the work under the terms of the contract and acting directly or through a duly authorized representative.
Control Strip	A short section of pavement layer or course compacted to the maximum density attainable with the equipment to be used for the rest of the layer or course. The attained maximum density is used as a reference when determining density of the rest of the course or layer.
Control Strip Method	Compaction of an asphaltic mixture to a density specified as a percentage of the maximum density attained using a control strip.

Controlled Access	A situation where the public authority, WisDOT or a local government establishes, through purchase or legal action, whether or not private driveways or public streets will be allowed to intersect the major highway or street, and if so, the number and nature of those connections.
Coring, Asphaltic Pavement	Removal of a cylindrical specimen from an asphaltic pavement by a rotary mechanical drill in order to measure depth or for determining asphalt content and aggregate gradation.
Coring, Concrete Pavement	Removal of a cylindrical specimen from a concrete pavement by a rotary mechanical drill for the purpose of measuring depth of paving.
Cost Reduction Incentive	A financial reward resulting from acceptance and implementation of a formal suggestion for reducing the cost of a construction contract.
Crack	A fissure or open seam not necessarily extending through the body of a material.
Cross-Section	A cut-away view of the highway or street showing the elements that comprise it: The widths, thicknesses, and slopes of the pavement, shoulders, base course, subbase course, and their relationship to natural ground.
Crown	The highest point on a nonsuperelevated cross-section of a road.
Crushed Aggregate	Aggregate resulting from the mechanical breaking of rock, boulders, large cobbles or gravel.
Culvert	Any structure not classified as a bridge which provides an opening under a roadway.
Cutback Asphalt	Asphalt cement which has been liquefied by blending with petroleum solvents (also called diluents). Upon exposure to atmospheric conditions the diluents evaporate, leaving the asphalt cement as a residue.
Darby	A long handled wood float used in concrete finishing.
Daylighting	As applied to column forms: The providing of openings in the forms for the purpose of inspecting and working the concrete. As applied to highways in cuts: Cutting back the slope on the inside of a curve or at an intersection for the purpose of increasing sight distance. Daylighting ditches.
Dense Graded Aggregate	A well graded aggregate proportioned to contain a relatively small percentage of voids.
Density	The weight per unit volume of a material, usually expressed in pounds per cubic foot.
Department	The Wisconsin Department of Transportation.
Detour	A road designated as a temporary route to carry vehicular traffic around a section of a highway closed to through traffic.
Diamond Interchange	A 4-leg interchange with a single one-way ramp in each quadrant.
Directional Interchange	An interchange generally having more than one highway grade separation, with direct connections for the major left-turning movements.
Divided Highway	A highway with separate roadways for traffic in opposite directions.
Division	The Division of Highways of the Department of Transportation of the State of Wisconsin.
Dowel	A load transfer element usually consisting of a plain round steel bar embedded in a concrete pavement and extending across a transverse joint.
Drift Pin	A metal pin tapered at both ends, used to draw members of a steel structure into position by being driven through the corresponding rivet or bolt holes.
Easement, Highway	A right to use or control the property of another for designated highway-related purposes.
Embankment	The mound of soil, soil-aggregate or broken rock constructed above the embankment foundation and below the subgrade.
Embankment Foundation	The material below the original ground surface whose physical characteristics affect the support of the embankment.

Emulsified Asphalt	An emulsion of asphalt cement, water, and a small amount of an emulsifying agent. Emulsified asphalt's may be of either the anionic or cationic type, depending upon the type of emulsifying agent.
End-Result Specification	A written requirement that places the entire responsibility on the contractor or producer for supplying an item of specified construction or a material of specified quality.
Engineer	The secretary of the department of transportation or the secretary's authorized representative limited by the particular duties assigned to the representative.
Equipment	All machinery and articles necessary for the proper construction and acceptable completion of the work. This includes the supplies, tools, and apparatus for upkeep and maintenance of the equipment.
Expansion Joint	A joint located to provide for expansion of a rigid slab without damage to itself, adjacent slabs or structures.
Expressway	A divided arterial highway for through traffic with full or partial control of access and either at-grade or grade-separated intersections.
Extra Work	All work performed by the contractor, with approval of the engineer, that does not appear in the proposal or contract as a specific bid item accompanied by a unit price, and that is not included under the price bid for other bid items in the contract. Extra work may also consist of additions to, or changes in, design of contract bid items or portions of contract bid items, if additions are wholly disassociated from or outside the scope of work in the contract, and if the work caused by these additions or changes must be performed under conditions or in a manner materially different from the conditions and manner existent for contract bid items under the original scope of work.
Faulting	Vertical displacement of rigid concrete slabs at a joint or crack.
Feathering	The process of tapering down an overlay to match the lower elevation of the overlaid surface.
Fine Aggregate	Those aggregates which entirely pass the 3/8" sieve, almost entirely pass the No. 4 sieve, and are predominantly retained on the No. 200 sieve.
Fineness Modulus	A numerical value obtained by adding the total percentages of a sample of the aggregate retained on each of a specified series of sieves and then dividing the sum by 100.
Flange	The element of a "T", "H", "WF" or "I"-beam structural steel shape that provides major resistance to bending.
Flash Point	The lowest temperature at which an asphaltic material subjected to increasing heat will ignite when exposed to open flame.
Flexible Pavement	A pavement structure which maintains intimate contact with and distributes loads to the subgrade and depends upon aggregate interlock, particle friction and cohesion for stability.
Floor Beam	A bridge member that extends from truss to truss, or from girder to girder across the bridge and carries the stringers.
Flushing	The loss of uncombined (free) asphalt from an asphaltic mixture.
Fly Ash	A finely divided residue resulting from the burning of coal.
Fog Seal	A thin application of asphaltic material without an aggregate cover.
Follower	A short piece of a pile that rests on the pile being driven and transmits the blow of the hammer to it. It is used when the top of the driven pile is below the leads of the pile driver.
Force Account Work	Prescribed work paid for on the basis of actual costs of labor, equipment, and materials. Also called "service and supply work".
Foresight	A survey sight taken to a point to determine elevation of that point, or a survey sight taken to a point to extend a previously established alignment.
Foundation Seal	Concrete placed in a stream bed or lake bed below the lower elevation of a footing to serve as a foundation for a footing and preclude intrusion of water into the cofferdam during construction.

Freeway	An expressway with access allowed only at interchanges.
Frontage Road or Street	A local road or street auxiliary to and located along the side of an arterial highway for service to abutting property and adjoining areas and for control of access.
Geogrid	A grid-pattern plastic sheet used to enhance the strength of earth construction.
Geomembrane	Any water-impermeable thin sheet of material used with foundation, soil, rock, earth or any other geotechnical managing-related material, as an integral part of a man-made project, structure or system.
Geotextile	Any water-permeable thin sheet of textile material used with foundation, soil, rock, earth or any other geotechnical managing-related material, as an integral part of a man-made project, structure or system.
Girders	The longitudinal fabricated bridge members supporting the deck of a bridge, either directly or through floor beams.
Gradation	A general term used to describe the composition by size of the aggregate particles in a mixture. It is usually expressed as the proportion (percent) of the aggregate that will pass a series of designated standardized sieves.
Grade Separation	A crossing of two highways, or a highway and a railroad, at different levels.
Grading Limits	The lateral lines beyond which no material is excavated in cuts and no material is deposited in fills.
Granular Backfill	Backfill of a specified gradation and consisting of sand, gravel, crushed gravel, crushed stone or other fragmented material.
Grout	A mortar of liquid consistency used to consolidate a mass of loose material or to fill seams, cracks, joints, or holes and consisting chiefly of sand and cement.
Gusset Plate	A plate of metal used at some joints of a steel-framed structure.
Gutter	Area between the face of the curb and the edge of the pavement.
High-Early Strength Cement	A type of Portland cement which differs from regular cement in chemical composition and finer particle size. Concrete made with high-early strength cement gains strength faster than that made with regular cement.
Highway Separation	Any structure carrying highway traffic over or under another highway or street.
Highway, Street, or Road	A public way for the purpose of vehicular travel, including the entire area within the right-of-way.
Hot Roller	The unit of compaction equipment performing the initial or breakdown compaction of a freshly-laid asphaltic surface.
Hot Screen	The wire mesh in the aggregate feeder component of an asphaltic mixing plant. It is used to separate the various sizes of heated aggregate prior to incorporation in a mix.
Hub	A short, wooden stake of square-end section used for survey reference points.
Impermeable Voids	Those voids in the individual particles of a dry material which do not become filled with water when the material is soaked.
Inlets	An opening and connection between the surface of the road bed and a storm sewer for the intake of surface water.
Inslope	A side slope between the shoulder and the ditch.
Inspector	The authorized representative of the engineer assigned to make inspection of all portions of the work or materials.
Integral Curb and Gutter	Curb and gutter placed simultaneously with the adjacent pavement and without a separating longitudinal joint.
Interchange	A highway separation with access connections between the highways.
Interchange Ramp	A turning roadway at an interchange for travel between intersection legs.
Interlock	A "fail-safe" mechanism in a mixing plant that denies further progression through the sequence of operations until preset requirements are met.

Intersection	The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movement in that area.
Intersection Entrance	The part of an intersection leg for traffic entering the intersection.
Intersection Exit	That part of an intersection leg for traffic leaving the intersection.
Intersection Leg	Any one of the highways radiating from and forming part of an intersection. The common intersection of two highways crossing each other has four legs.
Invitation For Bids	The advertisement for proposals for all work or materials on which bids are required. Such advertisement will indicate the character, quantity and location of the work to be done, or the character and quantity of the equipment and material to be furnished, and the time and place of submitting the proposals.
Island	A defined area between traffic lanes for control of vehicle movements or for pedestrian refuge. Within an intersection, a median or an outer separation is considered an island.
Joint	A designed vertical plane of separation or weakness in concrete pavement.
Laboratory	The materials testing laboratory of the department or other testing laboratory designated by the engineer.
Laboratory Method	Compaction of an asphaltic mixture to a density specified as a percentage of the maximum density attainable for the mixture under laboratory conditions and methods.
Laitance	A weak mortar that may collect at the surface of freshly placed concrete; usually caused by an excess of mixing water or by over finishing.
Leads	The two vertical members of a pile driver that steady the hammer and the pile during the driving.
Letting	A public meeting at which sealed bids from private contractors are opened and read.
Level Rod	A rod faced with a tape. It is used in determining elevations through vertical measurements with a leveling instrument.
Leveling Course	The layer of material placed on an existing surface to eliminate irregularities prior to placing an overlying course. Also called wedging course.
Liquid Asphalt	An asphaltic material having a soft or fluid consistency that is beyond the range of measurement by the standard penetration test. Liquid asphalt's include the three following normally designated types:
Liquid Asphalt, Slow-Curing (SC)	Liquid asphalt produced by cutting back an asphalt cement with relatively low volatile or heavy petroleum oil. Also called "road oil".
Liquid Asphalt, Medium-Curing (MC)	Liquid asphalt produced by cutting back an asphalt cement with a kerosene-type diluent of medium volatility.
Liquid Asphalt, Rapid-Curing (RC)	Liquid asphalt produced by cutting back an asphalt cement with a naphtha or gasoline-type diluent of high volatility.
Liquid Limit	The moisture content which is the boundary between the liquid and plastic states for the minus No. 40 fraction of soil.
Liquidated Damages	A credit payment to the State by a contractor for nonjustified exceeding of the contract time.
Load Transfer Device	A mechanical means for carrying traffic loads across a joint.
Local Road or Street	A street or road used primarily for access to residences, businesses, or other abutting property.
Locke Shot	A survey sight using a hand-held level, when cross-sectioning and out of range of the leveling instrument.
Longitudinal Joint	A joint normally placed between traffic lanes to control longitudinal cracking in concrete pavement.
Lute	A hand-held tool that resembles a rake in general form but has a smooth, straight bottom edge in place of teeth. It is used to smooth and shape asphaltic surfaces.

Major Item	A bid item whose total cost, determined by multiplying the bidding schedule quantity and the contract unit price, is equal to or greater than 5 percent of the total amount of the original contract.
Materials	Substances specified for use in the construction of the work.
Median	The portion of a divided highway separating the traveled ways for traffic in opposite directions.
Median Lane	A speed change lane within the median to accommodate left-turning vehicles.
Mesh	The square openings of a sieve.
Milling	Partial or full-depth removal of an asphaltic pavement by grinding.
Mineral Filler	Limestone dust, Portland cement or other similar material incorporated into asphaltic and concrete mixes to fill voids.
Minor Item	Any contract bid item whose total cost is less than 5% of the original contract amount.
Moisture Content	The proportion of moisture present in a material, expressed as a percentage of the oven-dry weight of the material.
Moisture-Density Relationship	The effect of moisture content on the density of a soil compacted according to specified conditions.
Mud Sill	A platform, usually timber, laid on earth as a bed for the sill of a framed trestle bent, or one of the timbers in such a platform.
Notice To Proceed	A written notice from the engineer to the contractor of the time period within which the prosecution of the work shall begin.
Open Graded Aggregate	A well graded aggregate containing little or no fine aggregate and with a relatively large percentage of voids.
Asphalt Stabilized Open Graded Base Course	A mixture of asphaltic material and open graded base course.
Cement Stabilized Open Graded Base Course	A mixture of cement, water, and open graded base course.
Optimum Moisture Content	The moisture content at which a particular soil will be brought to the greatest density obtainable with a specified compactive effort.
Ordinary Compaction	Compactive effort applied to an asphaltic layer or course to achieve a state of visual nondeflection under the compaction vehicle load.
Overbreak	The material in rock cuts that is removed outside the staked backslope limit.
Overburden	The soil mantle found over a deposit of rock, sand or gravel. It is normally stripped off and stockpiled for later use.
Overpass	A structure which carries a highway or railroad over another intersecting highway or railroad.
Parapet	The masonry barrier placed at the edges of a bridge to prevent pedestrians and vehicular traffic from falling off the bridge.
Pavement	See Surface Course.
Pavement Structure	The combination of subbase, base, and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.
Penetration	The consistency of an asphalt cement, expressed as the distance that a standard needle penetrates a sample of the material under standard conditions of loading, time, and temperature.
Permeable Voids	Those voids in the individual particles of a dry material which become filled with water when the material is soaked.
Pier	The vertical structural element built to support a bridge at the junction of connecting spans.
Pile, Piling	A length of timber or steel driven into the earth to provide support to an abutment, pier, footing or pile cap, or to protect a structure.

Plans	The department-approved plans, profiles, typical cross-sections, working drawings, and supplemental drawings that show the location, character, dimensions, and details of the work to be done.
Plant-Mixed Surfacing	A designed combination of aggregate and asphaltic material mixed in a stationary plant.
Plastic Limit	The moisture content which is the boundary between the moldable and semi-solid states of consistency of a soil. It is defined as the moisture content at which a soil will just begin to crumble when rolled into a thread approximately 1/8-inch in diameter.
Plasticity	The property of a soil which allows it to be deformed beyond the point of recovery without cracking or appreciable volume change.
Plasticity Index	The numerical difference between the liquid limit and the plastic limit.
Portland Cement	The product obtained by pulverizing clinker consisting essentially of hydraulic calcium silicates to which no addition, other than water and/or untreated calcium sulfate, has been made subsequent to calcination.
Portland Cement Concrete	The product resulting from mixing Portland cement, aggregate, and water.
Prime Coat	An application of a low viscosity liquid asphaltic material to coat and bind aggregate particles preparatory to placing a surface course.
Profile Grade	A line denoting elevations on the top of the pavement surface course, as taken along a longitudinal centerline or reference line.
Profiler	Equipment capable of measuring variations from a true plane on a pavement surface.
Project	The designated physical area together with all improvements to be constructed under the contract.
Proposal	The written offer of the bidder, submitted on the prescribed proposal form, to perform the work at the prices quoted by the bidder; also commonly known as the "bid."
Proposal Form	The approved form on which the Department requires bids to be prepared and submitted.
Proposal Guaranty	The security furnished with a bid to guarantee that the bidder will enter into the contract if the bid is accepted.
PS&E	Plans, specifications, and estimates, included as part of the contract proposal package, which define the scope and detail of work to be done under the contract
Pugmill	A type of mixer having paddles on a rotating horizontal shaft.
Pumping	The ejection of foundation material, either wet or dry, through joints or cracks or along edges of concrete slabs, due to vertical movements of the slab under traffic.
Quarry	A deposit of ledge rock from which the rock is excavated by cutting or blasting.
Quartering	A method of reducing the size of a sample without segregation.
Ramp	A connecting roadway between two intersecting highways at a highway separation; also may include other access connections.
Recycled Asphaltic Surface	A pavement produced by combining salvaged asphaltic pavement, new aggregate and new asphalt cement.
Recycling	Reuse of previously used paving materials.
Refinery	A plant for producing petroleum products from crude oil.
Reflection Crack	A crack appearing in a resurface or overlay which is caused by movement at joints or cracks in underlying base or pavement.
Reinforcement	Steel embedded in a concrete pavement to resist cracking due to temperature fluctuation; or steel embedded in structural masonry for load-bearing capability.
Resurfacing	The placing of one or more new courses or layers on an existing pavement surface.

Right of Access	The right to enter a highway from abutting land and exit a highway to abutting land.
Right of Entry	The right of Department personnel to enter private property temporarily to survey and investigate for transportation-related purposes.
Right-of-Way	Land, property, or interest in land or property acquired for or devoted to transportation purposes.
Rigid Pavement	A pavement structure having as the surface course a Portland cement concrete slab.
Riprap	An unbound collection of broken stones placed in or near water to protect a slope from erosion by lake or stream water action.
Roadbed	The graded portion of a highway, within top slopes and side slopes, prepared as a foundation for the pavement structure and shoulders.
Roadbed Material	The material below the subgrade in cuts and fills (embankments) and in embankment foundations extending to such depth as affects the support of the pavement structure.
Road-Mixed Surfacing	A designed combination of material components of a flexible pavement mixed on the roadbed by grading machine or a traveling plant.
Roadside	The area adjoining the outer edge of the roadway. Areas between the roadways of a divided highway may also be considered roadside.
Roadside Control	The public regulation of the roadside to improve highway safety, expedite the free-flow of traffic, conserve abutting property values, safeguard highway investment and preserve the attractiveness of the landscape.
Roadside Zoning	The application of public regulation of land use and improvements to enable roadside control.
Roadway	The portion of a highway within the limits of construction. A divided highway has 2 or more roadways.
Rubble	Irregular pieces of rock produced by natural or man-made forces and used in masonry.
Salvaged Asphaltic Pavement	Existing asphaltic pavement removed and retained for future use in recycled asphaltic surfaces.
Sample Splitting	See Quartering.
Sand	Granular material almost entirely passing the No. 4 sieve and predominantly retained on the No. 200 sieve.
Scalper Screen	A wire mesh placed in a stream of aggregate to remove material of excessive size.
Screed	A bar, plate or pan used to strike off fresh paving mixture to an established elevation and plane.
Screens	In aggregate processing, sections of heavy wire mesh used to separate the various sizes of aggregate.
Scum	The fine residue which floats on the water surface and is a product of mechanical paint removal from bridges.
Seal Coat	A thin surface treatment consisting of asphaltic material and cover aggregate.
Segregation	Nonuniform distribution of the various particle sizes within an aggregate.
Semi-Automatic Mixing Plant	A plant which, after an initial input by the operator for each weighing, proportioning and mixing sequence, will automatically complete such sequence.
Shoulders	The portions of the roadway contiguous with the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of base and surface courses.
Shrink Mix	Concrete which has been partially mixed in a stationary plant, dumped into a truck mixer and then has the mixing completed while in the truck.
Side Slope	A surface pitched downward and away from the traveled way; an inslope.

Sieve	In materials testing work, a screen or series of screens having standardized square openings and used for subdividing a material into separate successive sizes.
Silt Fence	A geotextile erected on land as a vertical barrier to trap and retain fine soil particle runoff from a construction site, while allowing clear water to pass.
Silt Screen	A geotextile erected and anchored as a floating vertical barrier in a body of water in order to trap and retain residue resulting from construction operations, while allowing clear water to pass.
Skid Number	The coefficient of skid resistance (locked tire) times 100.
Skid Resistance	The frictional force between a locked tire and a pavement, which force resists motion.
Slip Form Paving	The placing and consolidation of concrete without the use of fixed side forms, by utilizing a mixture having low slump.
Slope Stake	A stake set at right angles to the centerline to mark the point at which the proposed finished highway backslope or side slope will intersect the existing ground surface.
Slump	Subsidence in height of a freshly mixed concrete sample, following its molding in a standard slump cone and immediate release from the cone.
Slurry Seal	A seal coat consisting of a semi-fluid mixture of asphaltic emulsion and fine aggregate.
Soundness	The resistance of an aggregate to breakdown by expansion forces of freezing water or a crystallizing chemical.
Special Compaction	The compactive effort applied to an earth embankment or base course in order to achieve a measured specific density.
Special Provisions	Written directions and requirements applicable to a specific project and not otherwise thoroughly or satisfactorily detailed or prescribed in the standard specifications or supplemental specifications.
Specifications	Written directions, provisions, and requirements contained in the standard specifications, supplemental specifications, interim supplemental specifications, or special provisions, together with written agreements and documents referenced in the contract, pertaining to the method or manner of performing the work, the quantities of work, and the quality of materials to be furnished under the contract; as made part of the contract and contained in or referenced in the proposal.
Specified Density Procedure	Compactive effort applied to an asphaltic layer or course to achieve a specific density which has been determined on the basis of a control strip method or a laboratory method.
Splitting	Reduction in the size of a material sample preparatory to testing by means of a standardized method.
Stabilization	Modification of soils or aggregates by incorporating materials that will increase load bearing capacity, firmness, and resistance to weathering or displacement.
Standard Compaction	Compactive effort applied to an earth embankment or base course to achieve a state of visual nondeflection under the compaction equipment load.
Standard Drawings	Approved drawings of standard details for specific items of work.
Standard Specifications	Written directions and requirements approved for general application and repetitive use as contained herein for highway and structures construction and for administration of the contract.
Static Roller	A unit of compaction equipment achieving compactive effort by application of gravity only.
Statistically Random Sampling	Sampling at times or at locations determined in advance by the use of a table or numbers so arranged that every digit has an equal chance of occurring.
Storage Hopper, Silo	A closed, heated and insulated container capable of storing asphaltic mixture up to 16 hours without significant heat loss.
Stringers	The longitudinal members supporting the flooring of a bridge.

Subbase	The layer or layers of specified or selected material of designed thickness placed on a subgrade to support base.
Subcontractor	The individual, partnership, corporation, limited liability company, or joint venture to which the contractor, with the department's written consent, sublets part of the contract.
Subfoundation Course	An aggregate backfill placed below footings, or the bottom of box culvert slabs, in soft, muddy or wet locations to provide support to the footing or slab.
Subgrade	The top surface of a roadbed upon which the pavement structure and shoulders are constructed.
Subletting	Agreement by the contractor with a third party for the third party to perform part of the work under the contract.
Substructure	All of the bridge below the bridge seats or below the tops of the caps of piling or framed trestles, including the wing walls, backwalls, and parapets of abutments.
Superelevation	Banking of a curve.
Superintendent	The contractor's authorized representative in responsible charge of the work.
Superstructure	All of the bridge above the bridge seats or above the tops of caps of piling or framed trestles, including flooring, but excluding wing walls, backwalls, and parapets of abutments.
Supplemental Specifications	Written directions and requirements adopted subsequent to the publication of the standard specifications that amend the standard specifications.
Surety	The company executing a contract bond with the contractor.
Surface Course	One or more layers of a pavement structure, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate..
Surface Moisture	That part of the moisture content of aggregate which has not been absorbed into the particles.
Surface Treatment	One or more applications of asphaltic material and cover aggregate, or a thin layer of asphaltic plant mix, over an old pavement or any element of a new pavement structure.
Surge Bin	An open, unheated and uninsulated container capable of storing asphaltic mixture without significant heat loss for no more than two hours.
Tack Coat	An application of asphaltic material to an existing pavement surface to provide bond with an asphaltic overlay.
Tie Bar	A deformed (ridged) steel bar embedded in the concrete pavement and extending across a joint to prevent separation of abutting slabs.
Tiller	A machine having round, dull-edged discs with notched edges, used to anchor mulch by pressing it into the seed bed.
Time Chart	A graph prepared by the project designer and submitted with the PS&E to identify controlling work items, and the time and sequencing needed for their completion.
Tining	Grooving of an unhardened concrete surface by means of a steel "comb". A macrotexture is produced that promotes surface water runoff, reduces hydroplaning and improves friction.
Traffic Lane	The portion of a traveled way provided for the movement of a single line of vehicles.
Transit Mix	Concrete which has been produced by introducing uncombined mixture ingredients into a mixer truck and then subsequently combining and mixing entirely in the truck.
Travelled Way	The portion of the roadway provided for the movement of vehicles, exclusive of shoulders and auxiliary lanes.
Tremie	An assembly of an intake hopper, tube and discharge spout used for placing concrete under water.
Trestle, Timber	A wooden framework used to support a bridge deck and consisting of pile bents, caps, floor beams, and stringers.

Turf Drag	A section of artificial turf dragged longitudinally on unhardened concrete to produce a microtexture for skid resistance improvement.
Typical Sections	Representative cross-sections for the roadways to be constructed under a contract.
Underpass	A grade separation at which the highway passes under an intersecting highway or railroad.
Value Managing	An organized effort directed at analyzing the function of a highway-related component for the purpose of achieving the function at the lowest possible cost.
Vibratory Roller	A unit of construction compaction equipment capable of transmitting both a static and a dynamic load to the underlying surface.
Wale	A heavy, horizontal beam used as a guard or as a brace. In a cofferdam, wales brace the vertical sheet piles against lateral pressures.
Water-Cementitious Material Ratio	The ratio of net water, total water in the mixture minus the water absorbed by the aggregates, to total cementitious materials in concrete by weight.
Water Gain	Unabsorbed water forced to the surface of concrete by the settlement of the material during its transportation or during consolidation.
Wear	The abrasion of aggregates. The wear test measures the resistance of an aggregate to abrasion.
Wearing Course	See Surface Course.
Web	The element of a "T", "H", "WF" or "I" shape structural steel beam that connects the flanges and provides stability to the beam section.
Well Graded Aggregate	An aggregate possessing proportionate distribution of successive particle sizes.
Work	The furnishing of all labor, materials, equipment, and incidentals and the performing of all tasks needed to complete the project or a specific part of the project as specified in the contract, together with fulfillment of all associated obligations and duties required by the contract.
Working Day	A calendar day, except Saturdays, Sundays, department-specified holidays, and the period from November 16 to March 31, both dates inclusive, on which weather or other conditions not under the control of the contractor will allow construction operations to proceed for at least 8 hours of the day with the normal working force engaged in performing the controlling item of work which would be in progress at this time.
Working Drawings	Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel or any other supplementary plans, computations or similar data which the contractor is or may be required to submit to the manager for review.
Yield	The coverage or spread of a mixture.